DISTRIBUTION OF ANCHOVY EGGS IN BOKAKOTORSKA BAY

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Abstract

Anchovy, *Engraulis encrasicolus* (L.), is a pelagic species, widely spread in Mediterranean as well as in the Adriatic Sea. In this paper distribution of anchovy eggs in Boka Kotorska Bay (Southern Adriatic) is presented. The survey was performed at 18 stations in summer 2006, as a part of the project of ichthyoplankton investigation in Montenegrin waters.

Keywords: Ichthyoplankton, Adriatic Sea

Introduction

Anchovy (*Engraulis encrasicolus*, L., 1758) is one of the most important small pelagic fish species in Adriatic Sea. Anchovy eggs are pelagic and frequent in plankton from April to September, with peak in June-July. Maximum numbers of eggs occur in the open Adriatic earlier than in the coastal neritic waters [1, 2]. The aim of this paper was to present the distribution of the anchovy eggs in Boka Kotorska Bay during the period of spawning.

Materials and methods

Ichthyoplankton samples were collected in Boka Kotorska Bay in July 2006, by vertical tows of the PairOVET (modified CalVet) plankton net. Diameters of net cylinders were 25 cm each, and total mouth area was 0.098 m^2, while mesh size was 0.160 mm. Net was towed vertically with the speed of 0.5 m/sec^{-1}. 18 vertical plankton hauls were performed. Maximal depth of sampling was 55 m. At every station data on temperature and salinity, from the surface to the maximal depth attained, were collected by CTD probe. The samples were preserved in 2.5% solution of buffered formaldehyde. Maximal depths of hauls ranged from 12-50 m. Anchovy eggs were removed from the samples, staged and aged using methodology given in [2]. Average temperature from 0 to 20 meters was used to estimate of duration of the egg stage from spawning to hatching [2]. Thus, quantities of anchovy eggs at every station were expressed as number of eggs produced per $m^2 * day^{-1}$.

Results and discussion

Diameter of anchovy eggs (longer axis) ranged from 1.15-1.4 mm. Average production of eggs at all positive stations was 61eggs/ $m^2 * day^{-1}$. The distribution of eggs in the Bay is presented in Figure 1. Maximal production of the eggs was recorded in internal part of the Boka Kotorska Bay (Kotor Bay), while their number gradually decreased towards the entrance of the Bay.

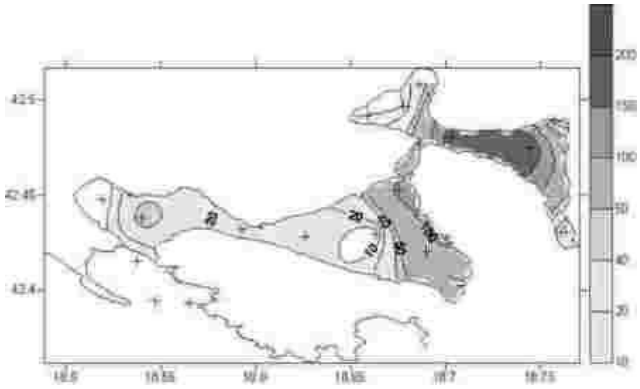

Fig. 1. Distribution of anchovy eggs ($N/m^2 * day^{-1}$)(L.) in Boka Kotorska Bay

Temperature ranged from16.98-23°C, while salinity ranged from 35.01-39‰. These ranges coincide very well with long-term data on temperature and salinity ranges of anchovy spawning in the Adriatic Sea [1, 2]. High spawning intensity in the internal part of the Bay may be explained by the influence of the fresh waters in that shallow area, which cause high organic production. Finally, spatial distribution of eggs found in this survey is in very good accordance with the spatial distribution found in July 1968 [3].

References

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